

--7. (Twice Amended) A method of inspecting a pattern, comprising the steps of:

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picking up a first pattern formed on a substrate to produce a first image;

storing the first image;

picking up a second pattern that is formed on the substrate so as to have naturally the same shape as the first pattern, thereby producing a second image;

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performing local gradation conversion of at least one of the stored first image and the second image to locally match a brightness of the stored first image with a brightness of the second image and aligning the stored first image and the second image with an accuracy of one pixel unit, and then comparing the first and second images to detect a defect and to obtain features of the detected defect; and

displaying information of the features of the detected defect on a screen.

8. (Twice Amended) A method of inspecting a pattern, comprising the steps of:

comparing a first image produced by picking up a first pattern formed on a substrate and a second image produced by picking up a second pattern that is formed on the substrate so as to have naturally the same shape as the first pattern after at least one of the first image and the second image

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has been subjected to local gradation conversion to locally match a brightness of the first image with a brightness of the second image and the first image and the second image have been aligned with an accuracy of one pixel unit, thereby extracting defects to be proposed, and obtaining certainty information of the extracted proposed defects;

detecting a true defect from the extracted proposed defects; and
producing information of the detected true defect.--

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--15. (Twice Amended) An apparatus for inspecting defects of patterns, comprising:

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image pick-up means for picking up a first pattern formed on a substrate and a second pattern that is also formed on the substrate so as to have naturally the same shape as the first pattern, thereby producing a first image of the first pattern and a second image of the second pattern;

storage means for storing the first image;

alignment means for aligning the stored first image and the second image with an accuracy of one pixel unit;

local gradation conversion means for performing local gradation conversion of at least one of the stored first image and the second image to locally match a brightness of the stored first image with a brightness of the second image;

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defect detection means for comparing the aligned first and second images, at least one of which has a brightness which has been corrected by the local gradation conversion means, thereby detecting defects of the patterns; and
output means for producing information of the defects of the patterns detected by the defect detection means.--

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--22. (Twice Amended) An apparatus for inspecting defects of a plurality of patterns formed on a substrate so as to have naturally the same shape, comprising:

table means on which the substrate is placed, and which can be moved in an X-Y plane;

image pick-up means for picking up the patterns of the substrate placed on the table means to produce images of the patterns;

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proposed-defects extracting means for processing the images of the patterns when the substrate placed on the table means is continuously moved after at least one of the images of the patterns has been subjected to local gradation conversion to locally match a brightness of the at least one of the images with a brightness of at least one other one of the images and the images of the patterns have been aligned with an accuracy of one pixel unit, thereby extracting proposed defects of the patterns;

defect detection means for detecting true defects from the proposed defects of the patterns that have been extracted by the proposed-defects extraction means; and

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output means for producing information of the true defects
detected by the defect detection means.--

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--27. (Twice Amended) An apparatus for inspecting defects of patterns,
comprising:

image pick-up means for picking up a first pattern formed on a
substrate and a second pattern that is formed on the substrate so as to have
naturally the same shape as the first pattern, thereby producing a first image of
the first pattern and a second image of the second pattern;

storage means for storing the first image;

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defect detection means for correcting at least one of the stored
first image and the second image by at least performing local gradation
conversion of at least one of the stored first image and the second image to
locally match a brightness of the stored first image with a brightness of the
second image and aligning the stored first image and the second image with an
accuracy of one pixel unit, comparing the first image and the second image to
detect defects after the at least one of the stored first image and the second
image has been corrected, and then estimating information of the detected
defects; and

display means for displaying on a screen the defects detected by
the defect detection means, and the information of the detected defects.--
